MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT
ON-SITE WASTE WATER DISPOSAL

PRE-APPLICATION QUESTIONNAIRE

COMPLETE PRIOR TO SUBMITTING ANY APPLICATION.

This questionnaire is designed so that we may serve you more efficiently. Please fill out completely and return it to the front counter for further instructions.

1. What type of on-site wastewater disposal system are you requesting permission to install? See page 3 of this packet or R18-9-E302 for detailed explanation of types of systems allowed.

   CONVENTIONAL SYSTEMS: septic tank(s) with disposal through: **(CHECK ONE)**

   _____ Deep trenches
   _____ Shallow trenches
   _____ Leach bed
   _____ Seepage pits
   _____ Chamber technology – type:_____

   NON-CONVENTIONAL SYSTEMS:_____
   List engineered type, see R18-9-E303 thru E323 for type.

   ____OTHER:_____
   Submit Form REQUEST FOR APPROVAL OF AN ALTERNATIVE FEATURE form must be completed. See R18-9-A312(G) for details.

2. Has a site evaluation been completed **and** a soils absorption rate been established?

YES If **YES**, by what method? See page 4 of this packet or R18-9-A310 for explanation of methods. **(CHECK ALL THAT APPLY) Then continue to question #3.**

_____Soils analysis, to the depth of _____feet
_____Percolation test
_____Seepage pit performance test

NO If **NO**, return to the front counter to fill out a **SITE EVALUATION APPLICATION** requesting this department to conduct these tests **OR** go to the public sector and have the tests completed by an Arizona Registered Engineer, Geologist or Sanitarian. All must have soils training and experience for on-site wastewater disposal. **NOTE**: Anyone conducting these tests for review by this department will be required to show their credentials and meet Maricopa County requirements pertaining to their qualifications.

3. Are you submitting all documentation that is required to fill out the **NOTICE OF INTENT TO DISCHARGE? ***

YES If **YES**, return to the front counter to fill out the **NOTICE OF INTENT TO DISCHARGE (NOID)** packet**.** Once submitted and fees paid you will receive a receipt and file number.

NO If **NO**, all documentation required by the Aquifer Protection Permit must accompany the NOTICE OF INTENT TO DISCHARGE packet or it will be rejected. Return when you have all the required documentation in hand to submit with your NOID packet.

* Are you submitting a design of an on-site wastewater disposal system to be reviewed by this Department?

YES If **YES,** you must attach the design to the NOID packet as per R18-9-A301 and A309.

NO If **NO**, MCESD will design your conventional on-site wastewater disposal system.**

*** AFTER 04/15/01 THIS DEPARTMENT WILL NO LONGER BE DESIGNING ON-SITE WASTEWATER DISPOSAL SYSTEMS.**

GENERAL
AQUIFER PROTECTION PERMIT RULE
INFORMATION

Background: On December 5, 2000 the Governor's Regulatory Review Council approved three rule packages that are a part of the Arizona Department of Environmental Quality unified water quality permit initiative and went into effect January 1, 2001. The Rule that governs on-site wastewater disposal systems (septic systems) is called the Unified Water Quality Permit Rule. Through legislative action this rule was developed by the Arizona Department of Environmental Quality under Title 18, Environmental Quality, Chapter 9, Department of Environmental Quality, Water Pollution Control, Articles 1 through 4. Maricopa County Environmental Services Department is working diligently to comply with the new rule.

Sources: A copy of the Rule can be obtained at the **Arizona Department of Environmental Quality** at 3033 North Central Ave, Phoenix, Arizona 85012 (across from Park Central Mall, just North of Thomas Road). The phone number for ADEQ is **602-207-4632 or 1-800-234-5677 ext.4632**. You may also download the rule from their website at:

http://www.adeq.state.az.us/environ/water/permits/app.html

and rule clarifications at:

http://www.adeq.az.us/environ/water/permits/index.html#clarif

Another source for the new rule is the **Arizona Secretary of State** located at 1700 West Washington Street, Phoenix, Arizona 85007. The main switchboard number is **602-542-4285**.

Maricopa County Environmental Services Department is not responsible for the accuracy of any submittal. The applicant or authorized agent is responsible for the accuracy and correctness of the required information. In addition, the applicant or authorized agent is responsible to comply with the provisions of the Unified Water Quality Permit Rule. Incorrect or inaccurate information will delay the approval process.

TYPES OF CONVENTIONAL ON-SITE WASTEWATER DISPOSAL SYSTEMS

Referenced from R18-9-E302, 4.02 general permit

General Information: Sewage disposal of individual homes that lie outside a public sewer district can be accomplished by on-site wastewater treatment facilities commonly called septic systems. A conventional septic system will consist of two parts: a tank to capture the solids and grease, and a drainfield or disposal area to dispose of the liquid. The type of drainfield will depend on the soil characteristics and site conditions. The most common type of drainfield for disposal of wastewater from septic tanks are shallow trenches, seepage pits, deep trenches, leach beds and chamber technology.

All disposal fields listed in 2 through 5 below require a minimum of two- (2) 10'-15' deep test holes, dug out by a backhoe. Soils analysis and/or percolation tests must be completed and pass all criteria for a conventional system. One (1) test hole shall be excavated in the proposed primary disposal area and one (1) test hole excavated in the proposed reserve area.

1. **SEEPAGE PITS,** R18-9-A312(E)(1): A seepage pit is a drilled pit, no less than 48" in diameter that is filled with aggregate. The depth of the pit, or pits, is based on the design flow and soil absorption rate (SAR) for that particular site. (Design flow means the daily flow rate a facility is designed to accommodate. See R18-9-101 for further definition). The seepage pit may only be installed in valley-fill sediments in a basin and range alluvial (moved by water) basin. It must also be established that the site satisfies the minimum vertical separation test. Once these criteria have been proven acceptable, the pit must then pass a seepage pit performance test. For a seepage pit to be considered for disposal, the following documentation must be submitted with the NOID:
a) A detailed engineered report, prepared by an Arizona Registered Engineer, Geologist or Sanitarian with soils background and experience in the on-site wastewater disposal field, certifying the site has sufficient valley-fill sediments in a basin & range alluvial (moved by water) basin for the seepage pit to perform properly.
b) Written test procedures and results from a seepage pit performance test conducted in accordance with R18-9-A310. See page 4 of this packet or R18-9-A312E for more information.
c) Site Investigation Report identifying any limiting conditions.
d) Drill logs, well logs or records from Arizona Department of Water Resources identifying the depth of seasonal high water.

2. **SHALLOW TRENCHES,** R18-9-E302(A)(2) and (C)(2): One or more trenches filled with aggregate. Trenches may be 12" to 36" wide, have a maximum overall depth of 60" and a maximum length of 100'. MCESD highly recommends that trenches over 50' in length be split into two or more trenches of lengths less than 50' to provide a more even distribution of wastewater and better absorption by the soils. Minimum space between each trench is twice the effective depth (the distance between the bottom of the distribution pipe and the bottom of the trench) or 5', whichever is greater. In calculating the disposal area, the 12 inches below the distribution pipe cannot be used to determine the absorption area. Therefore, only the distance from the bottom of the trench up to 12 inches below the pipe may be used. See R18-9-A312(D) for more information.

3. **DEEP TRENCHES,** R18-9-E302(A)(2) and (C)(2): One or more trenches filled with aggregate. A deep trench may be 12" to 36" wide, have an overall depth of 60" to 96", and a maximum length of 100'. MCESD highly recommends that trenches over 50' in length be split into two or more trenches of lengths less than 50' to provide a more even distribution of wastewater and better absorption by the soils. Minimum space between each trench is twice the effective depth (the distance between the bottom of the distribution pipe and the bottom of the trench) or 5', whichever is greater. In calculating the disposal area, the 12 inches below the distribution pipe cannot be used to determine the absorption area. Therefore, only the distance from the bottom of the trench up to 12 inches below the pipe may be used. In addition, the soil absorption rate (SAR) is decreased by approximately 30%, therefore, increasing the overall area required for the sewage disposal. See R18-9-A312D for more information.

4. **LEACH BED,** R18-9-E302(A)(2) and (C)(3): A shallow disposal field, which is filled with aggregate. The bed width is between 10' and 12' with 2 distribution lines. The maximum overall depth is 60" and the maximum length is 100'. MCESD highly recommends splitting up the system into multiple, shorter beds to provide more suitable distribution of wastewater than one long bed. In calculating the size of the leach bed ensure that the area of each bed is at least 50% greater than the tabular dimensions required for a trench. Also use the same criteria as for a deep trench by decreasing the SAR by approximately 30%.

5. **CHAMBER TECHNOLOGY,** R18-9-E302(A)(2) and (C)(4): This method of disposal uses an ADEQ approved chamber as the filter media rather than aggregate. The chambers are placed in very shallow trenches. All chambers must be installed per Arizona Department of Environmental Quality approved directions.

SITE/SOILS TESTING TYPES DESCRIPTION

Referenced from R18-9-A310

SITE INVESTIGATION R18-9-A310(C) and (D): A site investigation will consist of a visual examination identifying any limiting site conditions, as stated on page 5 of this packet and R18-9-A310(B), that may interfere with the operation of an on-site wastewater disposal system. The information obtained from a site investigation is used in conjunction with the soil analysis to locate, select and design an on-site wastewater disposal system.

TEST HOLE EVALUATION R18-9-A310(C), (D) and (G): A minimum of **two- (2)** 10' to 15' deep holes shall be excavated by a backhoe on the lot, one in the proposed primary disposal area and one in the proposed reserve area. A reserve area is an area equal to the primary area to be set aside for use at a later date should the primary area fail or need to be abandoned. These holes are to be analyzed and tested by an Arizona Registered Engineer, Geologist or Sanitarian with soils background or experience in the on-site wastewater disposal field. The analysis will determine the characterization of the soils and will establish a soil absorption rate (SAR) to be used in calculating the size of the septic system. The Aquifer Protection Permit Rule describes the approved methods for determining soil characteristics.

PERCOLATION TESTS R18-9-A310 (E): A percolation test is a water absorption test conducted in the primary disposal area and reserve disposal areas. They must be performed at each horizon (soil change) of the test hole. The percolation test hole shall be 12"x12" square or 15" round, presoaked with clean water 16 to 24 hours in advance of the actual test as stated in Rule. This test may be used solely or in conjunction with a test hole analysis to determine the soil absorption rate (SAR) to be used in calculating the size of the disposal system. The test results represent how fast the water will absorb into the soil (drop) over a specific period of time. Report in minutes per inch.

SEEPAGE PIT PERFORMANCE TEST R18-9-A310 (F): This test is conducted for seepage pits only. Identify the primary and reserve disposal areas on the site plans. In the primary area only, conduct the test in a hole, a minimum 18" in diameter and at least 30' deep, or to the depth of the proposed seepage pit, whichever is greater. Presoak the hole with clean water to a point 36" below the land surface. Observe as per R18-9-A310(F)(2). Conduct the actual test by refilling the hole with clean water to the same point as for the presoak and measure how far the water level drops in 10-minute increments. The final numbers will represent a soil absorption rate (SAR) to be used in calculating the size and number of seepage pits to be installed at the site.

R18-9-A310 - Limiting Conditions

B. The investigator shall perform a site investigation if an on-site wastewater treatment facility is proposed for installation. The applicant shall submit the following information in a format prescribed by the Department and shall provide sufficient data to:

1. Determine if any of the following limiting conditions exist:
   a. The soil absorption rate determined by the requirements of this Article is more than 1.20 gallons per square foot per day;
   b. The soil absorption rate determined by the requirements of this Article is less than 0.13 gallons per square foot per day;
   c. The vertical separation distance from the bottom of the lowest point of the disposal system to the seasonal high water table is less than the minimum vertical separation specified by R18-9-A312 (E) or seasonal saturation at the surface occurs;
   d. The surface slope is greater than 15% at the intended location of the on-site wastewater treatment facility;
   e. Minimum setback distances are not within acceptable limits as specified in R18-9-A312(C);
   f. The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will cause surfacing of wastewater at the design flow rate or provide a direct conduit to the aquifer is less than the minimum vertical separation specified by R18-9-A312 (E).
   g. Surface drainage characteristics at the intended location of the on-site wastewater treatment facility will adversely affect the ability of the facility to function properly; or
   h. The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will convey wastewater to a water of the state to cause or contribute to a violation of an Aquifer Water Quality Standard established under A.R.S. Title 49, Chapter 2, Article 2 is less than the minimum vertical separation specified under R18-9-A312 (E).
2. Allow selection of an appropriate on-site wastewater treatment facility for the site considering all limiting conditions that exist.
3. Effectively locate, design, and install a properly operating on-site wastewater treatment facility to serve the anticipated development at the site, whether or not limiting conditions exist.

Minimum Vertical Separation R18-9-A312 E

MAXIMUM SOIL ABSORPTION RATE (Gallons Per Day Per Square Foot)			MINIMUM VERTICAL SEPARATION (feet)	
Shallow Disposal Field	Deep Disposal Field	Seepage Pit	Shallow or Deep Disposal Field	Seepage Pit
1.20+	0.93+	1.20+	Not allowed for septic tank effluent	Not Allowed
0.63+ to 1.20	0.42.to 0.93	0.63+ to 1.20	10	60
0.20 to 0.63	0.13 to 0.42	0.36 to 0.63	5	25
Less than 0.20	Less than 0.13	Less than 0.36	Not allowed for septic tank effluent	Not allowed